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as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is asserted that it is unclear from the specification what the coordinates L^* , a^* and b^* stand for. Specifically, the Examiner is unclear if the X, Y and Z values in the equations supplied with the previous response are known values or values from collected data, and therefore, does not know how to make a comparison between the applicant's values and the referenced art.

Response to the §112 Rejections

Applicants again note that the HunterLab color scale coordinates of L^* , a^* , or b^* are very well known standards used by those skilled in the art. Definitions for the Hunter coordinates from the "Compilation of ASTM Standard Definitions," Eighth Edition, 1994, were provided with the previous response. The X, Y and Z are the tristimulus values measured from a particular sample. If only a known value were used for each of X, Y and Z in the supplied equations, the HunterLab color scale coordinates of L^* , a^* , or b^* would always be the same. It is noted that the specification refers to the prevention of discoloration as "indicated by a one unit or more change in any Hunter color scale coordinates of L^* , a^* , or b^* " (page 11, lines 1-2). Thus, it is respectfully submitted that one skilled in the art would readily understand the meaning of the Hunterlab L^* , a^* and b^* as used in claims 8 and 9 without any more specific explanations in the specification. Claims 8 and 9 are therefore not indefinite under 35 USC §112, and the rejection should be withdrawn.

§ 102 Rejections

Claims 1, 3, 4, 6, 7, 10-13, 16-18, 26, 27, 30, 31 and 35 have again been rejected under 35 U.S.C. 102(b) as being anticipated by Tsuei (USPN 5, 783,303).

The Office Action indicates that Tsuei discloses an article with a plurality of "ceramic granules" (column 11, lines 47-51 and Figure 1, #16) bonded to a polymeric film (column 11, lines 28-30 and Figure 1, #11) by a radiation curable (column 4, lines 41-44) aliphatic urethane acrylic copolymer (column 4, lines 30-31). A variety of items may be added to the curable coating including pigments, dyes, ultraviolet absorbers, ultraviolet scavengers, fillers and adhesion promoters (column 7, lines 26-37). In order to improve adhesion to the coatings, the film may be

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primed (column 11, lines 43-45). The article may also be formed a free-standing coating with a layer of adhesive to attach particles to the surface (column 12, lines 26-45). A size coating, sealant, of varying thickness is placed over the particles, completely covering some of the particles, and adhesive layer to help bond the particles to the film (column 10, lines 39-59). The article may be used as a floor covering (column 9, lines 59-64).

In response to the arguments previously submitted by applicants, it is asserted that the solid ceramic granules of Tsuei "are performing an equivalent function to the Applicant's ceramic coated granules, unforeseen of any unexpected results from the coated ceramic granules."

Response to the § 102 Rejections

It is well established that "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Thus, for there to be anticipation, "the identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claim 1 defines an integrated granule product comprising a film having a plurality of "ceramic coated granules" bonded to the film by a cured adhesive. As defined at page 3 lines 12-17 of the specification, "'ceramic coated granule' means an inorganic base substrate of generally rock, mineral, or recycled material (e.g. slag) in granular form having a coating which includes an amount of an alkali metal silicate binder sufficient to bind the coating to the inorganic granule."

As acknowledged by the Examiner, Tsuei does not disclose "ceramic coated granules." While applicants submit that Tsuei's frictional particles of ceramic aluminum oxide are not even of equivalent function to the claimed "ceramic coated granules," this is not a relevant consideration for determining anticipation under 35 U.S.C. 102. Since Tsuei does not disclose ceramic coated granules, it does not disclose each and every element as set forth in claim 1, and therefore does not anticipate claim 1.

Independent claims 12 and 17 also require "a plurality of ceramic coated granules," and are thus not anticipated by Tsuei for at least this reason.

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Each of the claims 3, 4, 6, 7, 10, 11, 13, 16, 18, 26, 27, 30, 31 and 35 depends, either directly or indirectly, from one of the claims 1, 12 or 17. Each is thus patentable over Tsuei for the same reasons noted above in respect of those claims. The rejection of claims 1, 3, 4, 6, 7, 10-13, 16-18, 26, 27, 30, 31 and 35 under 35 U.S.C. 102(b) as being anticipated by Tsuei has been overcome and should be withdrawn.

§ 103 Rejections Over Tsuei

The rejection of claims 2, 5, 8, 9, 14, 15 and 19 under 35 U.S.C. 103(a) as being unpatentable over Tsuei (USPN 5, 783,303) was also repeated in the Office Action.

In this regard, the Office Action indicates that Tsuei discloses a product with white ceramic granules (column 11, line 52) adhered to a film with transparent adhesive (column 10, lines 63-65) that was tested for flexibility, pliability, (column 25, lines 14-24) and had a tensile elongation of 112% (column 25, lines 37-40).

Regarding determining the pliability of the product by mandrel flexibility test procedures according to ASTM D-228-00, the flexibility tested according to ASTM D-882.97, the aesthetic color being changed as indicated by one unit or more of change in an HunterLab color coordinates of L*, a* or b* and the product exhibiting a value of 64 or greater for L* according to HunterLab spectrophotometer test procedures in claims 2, 5, 8, 9, 14, 15 and 19, it is stated that the determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 946, 966 (Fed. Cir. 1985) and MPEP §2113. In this case, the limitation of using ASTM D-228-00, ASTM D-882.97 and HunterLab color coordinates and spectrophotometer test procedures is a method of production and therefore does not determine the patentability of the product itself. Process limitations are given little or no patentable weight. The method of forming the product is not germane to the issue of patentability of the product itself. Further, when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claim in a product-by-process claim, the burden is on the Applicant to present evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the

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prior art. *In re Brown*, 459 F.2d 531, 173 USPQ 685 (CCPA 1972); *In re Fessman*, 489 F.2d 742, 180 USPQ 324 (CCPA 1974).

Response to the § 103 Rejections Over Tsuei

Claims 2, 5, 8, 9, 14, 15 and 19 all depend, either directly or indirectly, from one of the claims 1, 12 or 17. Each is thus patentable over Tsuei for the same reasons noted above with regard to those claims. The rejection of claims 2, 5, 8, 9, 14, 15 and 19 under 35 U.S.C. 103(a) as being unpatentable over Tsuei has thus been overcome and should be withdrawn.

§ 103 Rejections Over Tsuei and George

Claims 1, 26, 28, 29 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuei in view of George et al. (USPN 5,516,573).

Tsuei is noted to disclose an article with a plurality of "ceramic granules" (column 11, lines 47-51 and Figure 1, #16) bonded to a polymeric film (column 11, lines 28-30 and Figure 1, #11) by a radiation curable (column 4, lines 41-44) aliphatic urethane acrylic copolymer (column 4, lines 30-31). A variety of items may be added to the curable coating including pigments, dyes, ultraviolet absorbers, ultraviolet scavengers, fillers and adhesion promoters (column 7, lines 26-37). In order to improve adhesion to the coatings, the film may be primed (column 11, lines 43-45). The article may also be formed a free-standing coating with a layer of adhesive to attach particles to the surface (column 12, lines 26-45). A size coating, sealant, of varying thickness is placed over the particles, completely covering some of the particles, and adhesive layer to help bond the particles to the film (column 10, lines 39-59). The article may be used as a floor covering (column 9, lines 59-64).

It is acknowledged, however, that Tsuei fails to disclose the article being a roofing shingle or a roll of roofing material, the tensile strength according to American Roofing Manufacture Association Test Index No. 2,126 of greater than 50% over a shingle without said integrated granule product, the substrate being an asphalt-based substrate and the integrated granule product forms an exposed layer of roofing material.

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George et al. teaches ceramic-coated granules (column 3, lines 8-12) on the surface of an asphalt based substrate (Column 4, lines 20-21) of a roofing material (Figure 3, #63 and column 2, lines 46-47) wherein the roofing material includes roof shingles with exposed surfaces (Column 1, line 11 and lines 39-42) for the purpose of giving protection against exposure from ultraviolet light and improve fire resistance and weather characteristics.

It is concluded that "it would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have provided asphalt as the substrate in a roofing material in a shingle in order to give protection against exposure from ultraviolet light and improve fire resistance and weather characteristics as taught by George et al. since Tsuei already contained a type of gritted material adhered to a substrate."

Regarding claim 29, since the Examiner has taken the position that Tsuei in view of George et al. discloses the same materials, a polymeric film and hot melt adhesive, as desired by the applicants, it is asserted to be inherent that the roof shingle exhibits a tensile strength of greater than 50% over a shingle without the integrated granule product according to American Roofing Manufacturers Association Test Index No. 2,126.

Response to the § 103 Rejections Over Tsuei and George

Tsuei is directed to curable water-based coating compositions having use as a paint, primer, edge sealer, or as a binder for holding frictional particles to antislip products such as friction surface sheet materials and nonskid or antislip sheet materials (column 9, lines 55-59). The Examiner has not shown that curable water-based coating compositions of Tsuei have any application to roofing materials.

On the other hand, George et al. is directed to roofing materials formed from granules coated with a ceramic embedded in the asphalt of a roofing shingle (column 2, lines 45-47). Thus, unlike Tsuei, the granules of George et al. are provided on a roofing material suitable as the exposed layer.

While asserted in the Office Action that it would have been obvious "to have provided asphalt as the substrate in a roofing material in a shingle", this does not support the combination of Tsuei and George et al. proposed by the Examiner. It is the granules of George et al. that

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provide the protection from UV light, fire resistance, and weathering (see col. 1, lines 40-48). In fact, there is no suggestion or motivation set forth in either Tsuei or George et al. for replacing the wide variety of suggested friction particles of Tsuei with the coated ceramic roofing granules of George et al. The Examiner has not shown where Tsuei particles provide any protection. Absent a showing of some such suggestion in the prior art, the applicants' teaching has been impermissibly used to hunt through the prior art for the claimed elements and combine them as claimed. *In re Laskowski*, 10 USPQ 2d 1397, 1398 (Fed. Cir. 1989).

The rejection of claim 1 under 35 U.S.C. 103(a) as being unpatentable over Tsuei in view of George et al. should therefore be withdrawn. Moreover, claims 26, 28, 29 and 36-38 all depend, either directly or indirectly, from claim 1 and are patentable over Tsuei and George et al. at least for the reasons discussed above with regard to claim 1. The rejection of claims 1, 26, 28, 29 and 36-38 under 35 U.S.C. 103(a) as being unpatentable over Tsuei in view of George et al. should be withdrawn.

Conclusion

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested.

Respectfully submitted,

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Date

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